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INDIAN NOTES AND MONOGRAPHS

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A SERIES OF PUBLICA-
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AMERICAN ABORIGINES

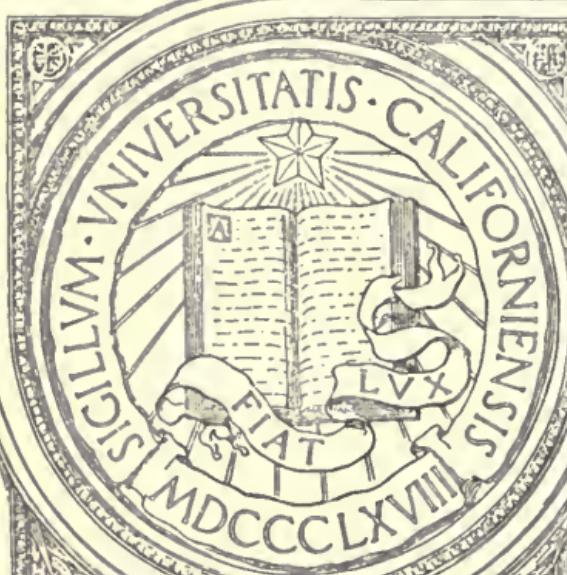
STRING RECORDS OF THE NORTHWEST

BY
J. D. BERGHMAN
AND
M. P. HARRINGTON

NEW YORK
MUSEUM OF THE AMERICAN INDIAN
HEYE FOUNDATION
1921

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CASE CONTAINING STRING RECORD 1, NICOLA VALLEY, B. C.
(Width, 3 in.)

INDIAN NOTES AND MONOGRAPHS

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414433

STRING RECORDS OF THE NORTHWEST

By J. D. LEECHMAN

THE custom of keeping biographical records by means of knots tied in string seems to be restricted, in North America, to the interior Salish and neighboring tribes of the Northwest. One specimen of such a record has been seen by the author from Nicola valley in southern British Columbia, and two from the neighborhood of Yakima, Washington. No mention of such records is made in any of the literature dealing with this district to which the author has had access, and it is believed that their existence is not generally recognized.

These records differ from the quipu of South America in that their basic principle is chronological and not numerical. While the quipu is based on the decimal system,

and consists of a main cord with dependent strings,¹ the records here described are formed of one string only, with groups of simple knots tied in it, each knot representing a day and each group apparently a week, though many of the groups consist of more or less than seven knots, and so an irregularity is introduced which is not easy of explanation.

These knots are frequently distinguished by various markers which differ in color, size, material, and, apparently, in importance, and are not of necessity placed at regular intervals. In one record (Spec. 2), the property of Mr L. V. McWhorter, of Yakima, which he was good enough to lend for examination and illustration, the markers are at practically regular intervals, while the knots are usually in groups of seven. He states that the markers, in this case beads, indicate moons, and as they occur every twenty-eight knots, this seems to be a correct explanation. In the specimen from Nicola valley (Spec. 1), however, this theory falls to the ground, for the spac-

ing of both markers and groups is very irregular.

It appears from the statements of informants that such a biographical record is often commenced, by the mother, at the birth of the child, and that it serves not only to record its age but any unusual happenings in its life. A letter from Mr James Teit, of Spence's Bridge, British Columbia, well known for his ethnological studies of the Salish Indians, gives the following information:

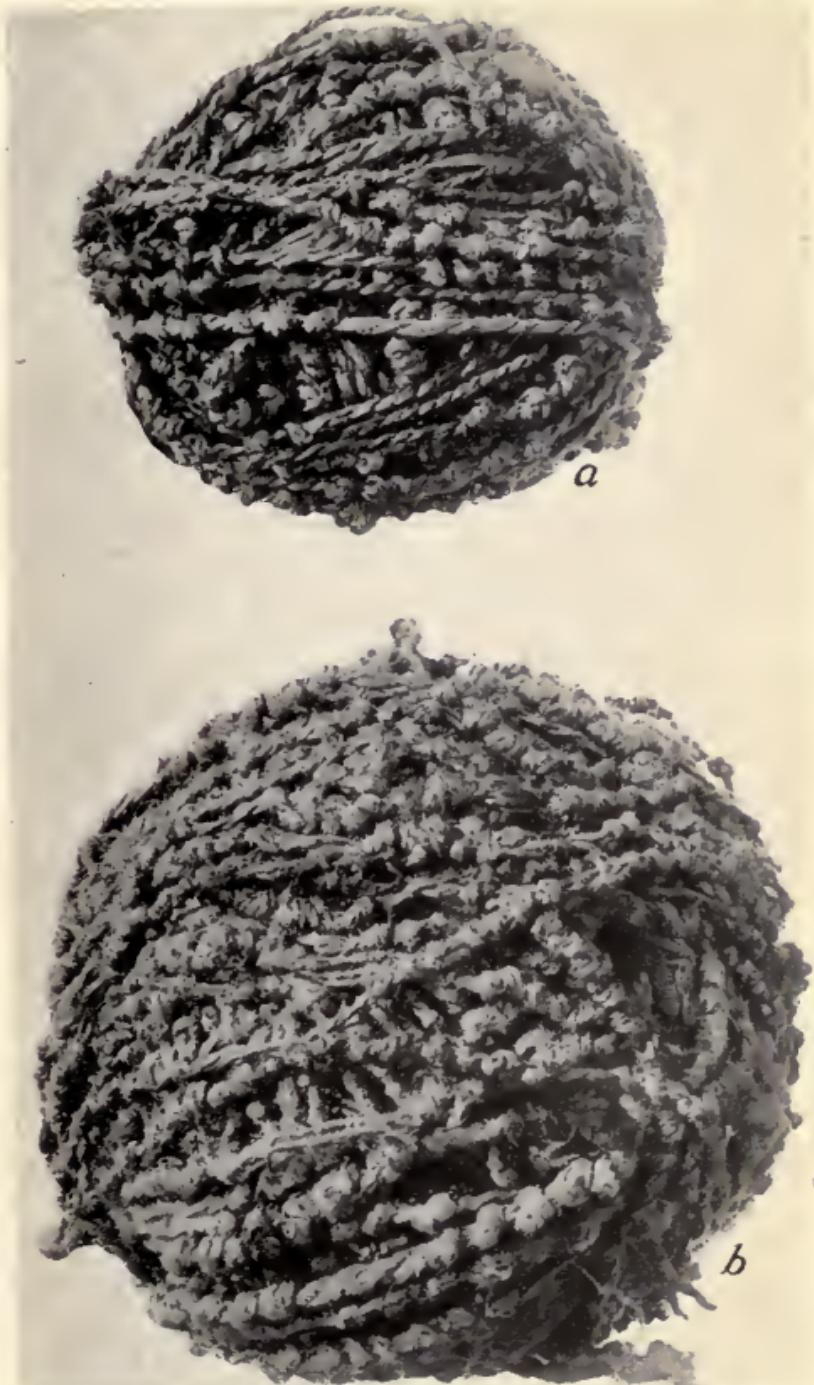
There seems to be little doubt of its being a record such as numbers of the old Indians used to keep. I have seen several of them in use. These records are individual and therefore cannot be interpreted correctly or even approximately in most cases by any other than the owner. Days, weeks, months, and years are marked by different knots or marks, different individuals using somewhat different systems. Other markers generally representing special happenings or dates consist of attachments or wrappings of rag, bark, string, hair, sinew, etc. Colors are occasionally used in a systematic way. Other records are made on hide and wood, generally by notching, etc., and sometimes painting, etc., but string records are much more common. You speak of the material *koiskana*—*kō-is* or *kwoes* is the name of the

material, the name *koishana* being that of a place seemingly originating from the name of the material. Some necklaces used in this district consisted of bark or buckskin with knots and wrappings of hair, etc., between, but it seems your specimen is evidently a record.

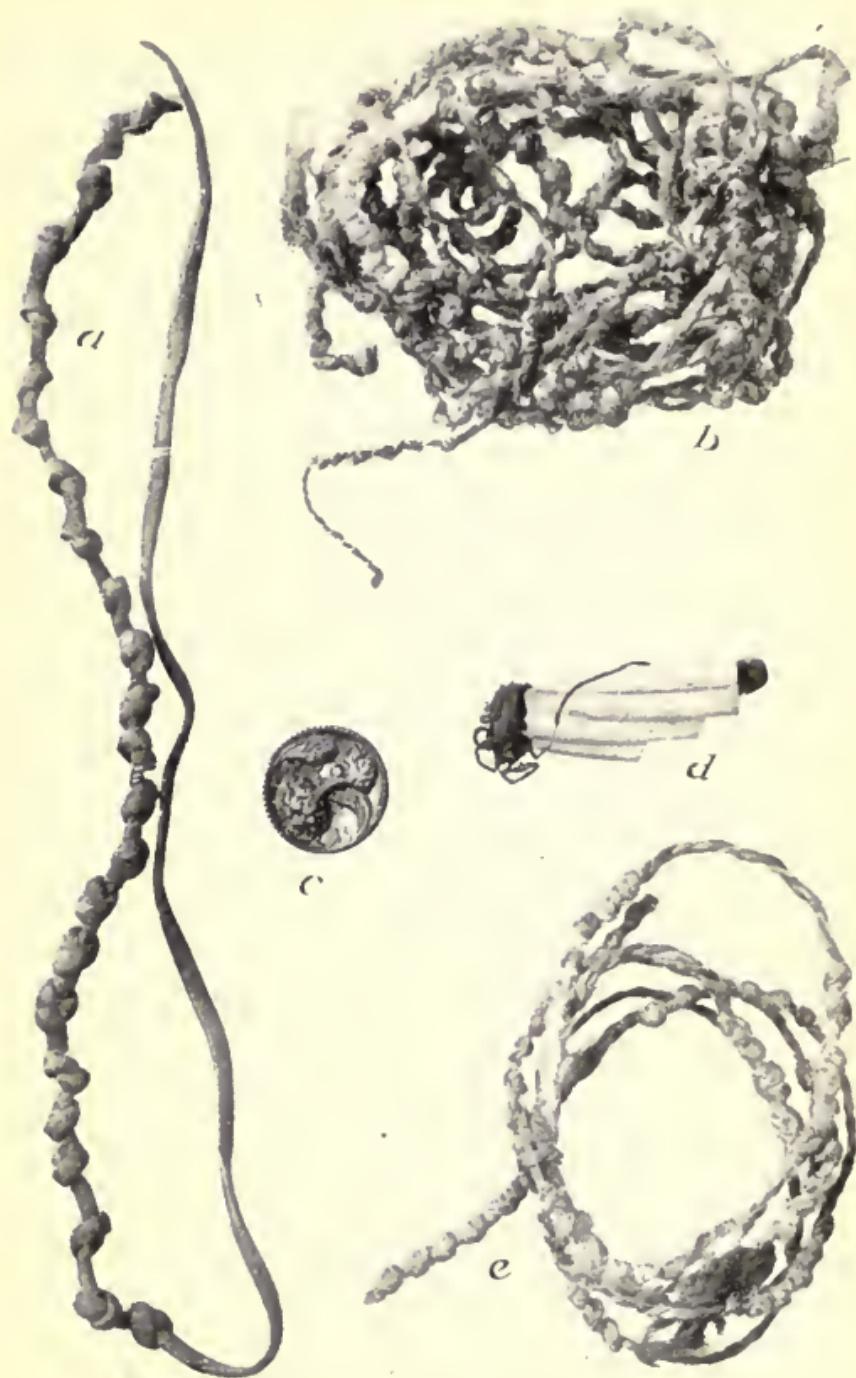
Inquiries among the Indians of Cape Flattery and Puget sound have resulted in answers which lead to the conclusion that this system of records was unknown to them.

Another record (Spec. 3), at present in the Museum at the University of Washington, was lent to the author for the purpose of securing a photograph, but permission to unwind the ball was not obtained. It is tied into knots as are the others, with markers of beads and shells, but it was not possible to confirm the impression that these markers are arranged in groups indicating lunar phases, as in the Yakima specimen.

The specimen from Nicola valley (Spec. 1) is now in the Museum of the American Indian, Heye Foundation, and was found by the writer in 1911, hanging on a corner-post of a fence surrounding an Indian grave in a cemetery near the Indian village of



STRING RECORD 1 AFTER REMOVAL FROM CASE
NICOLA VALLEY, B. C.
(Diameter of *b*, 2.8 in.)



ADDITIONAL CONTENTS OF STRING RECORD CASE, NICOLA
VALLEY, B. C.
(Length of *d*, 1.5 in.)

Tsulus, in Nicola valley, about four miles north of Merritt, British Columbia.

It is a carefully made bag of deerskin (pl. I), provided with a single loop of the same material attached at the back, and secured in front by a single button, apparently an ordinary metal trousers button. In it were found the following objects:

(1) A large ball of string (pl. II, *a*), composed principally of the bark of the dogbane (*Apocynum cannabinum*) known to the Indians as *kois*. The string is about 180 feet in length and is tied into more than 6,600 simple knots.

(2) A smaller ball of cord of the same material (pl. II, *b*), about 33 feet long and tied into about 1,400 knots.

(3) A third cord (pl. III, *b*), not rolled into a ball, seven feet long and tied into 308 knots.

(4) A brass button (pl. III, *c*), 0.7 in. in diameter, with an ornate design representing a tree and butterflies in bold relief. A wing appears on each side of the trunk of the tree. The button has a plain metal back with a metal shank for attaching it to clothing, and is spotted with verdigris.

(5) A leather shoe-lace, 16 in. in length, (pl. III, *a*), with 24 knots fairly equally spaced, but occupying only 7.5 in., the remainder of the strip being without knots.

(6) Four dentalium shells (pl. III, *d*), threaded on fine strips of sinew. The shells are of slightly different lengths, as follows: 0.6 in., 0.98 in., 1.12 in., 1.08 in. The four sinew threads on which they are strung are attached at their ends to a small bit of leather so that the shells lie parallel to one another and in the same plane.

The larger ball was tightly wound. Commencing at the inner end the knots were tied in groups (pl. IV, *a, b, c*), following an initial blank space about two inches long, as shown in the Table, Specimen 1, *a*, pp. 16-35.

The smaller ball has a loose piece of string (pl. III, *e*; IV, *h, i, j*), wrapped round it, about 33 in. in length, knotted as shown in the Table, Specimen 1, *b*, p. 36.

After unwinding about 11.5 ft. of the ball itself, it was found to be tied about with a strip of *kois*, passed three times round the ball and then tied in a half-bow.

A little more than two feet of the inner end of the string is left unrestrained by the band. No knot was found at the free end of this string, in which respect it differs from all the others. It is knotted as shown in the Table, Specimen 1, *c*, pp. 37-38.

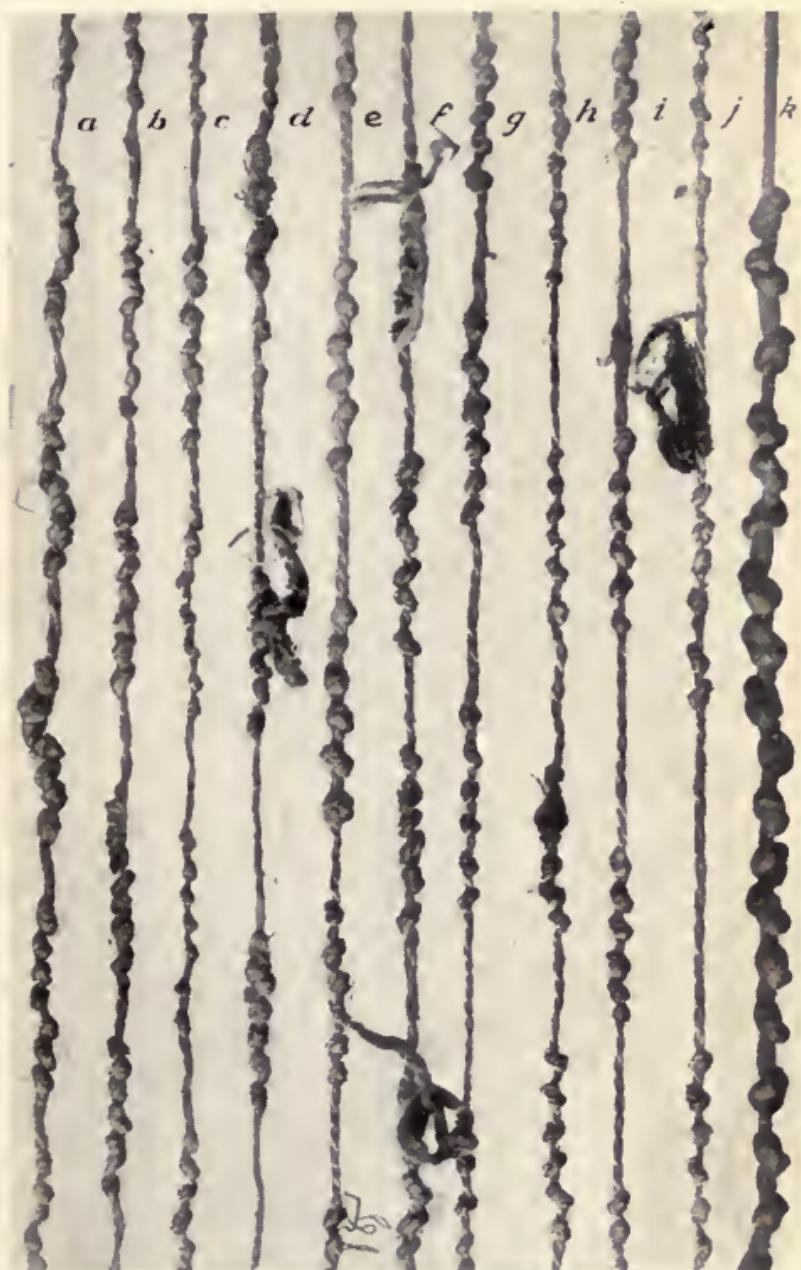
The shortest string (pl. III, *b*; VI, *d, e, f, g*), which is not included in either of the two balls, is 6 ft. 11.25 in. in length, and is notable for more variations in color than any of the others. It is knotted as shown in the Table, Specimen 1, *d*, pp. 39-41.

It will be noted that the rule is six knots in a group, though there are many exceptions. The general character of the knots and markers on these strings may be seen in pl. IV. In the specimen from Yakima, owned by Mr McWhorter (Spec. 2), as shown in the Table, pp. 42-47, seven knots in the group is almost invariable, which makes it much easier to fit into our calendar. The space between groups is probably to be considered as marking Sunday in the Nicola and similar valley specimens.

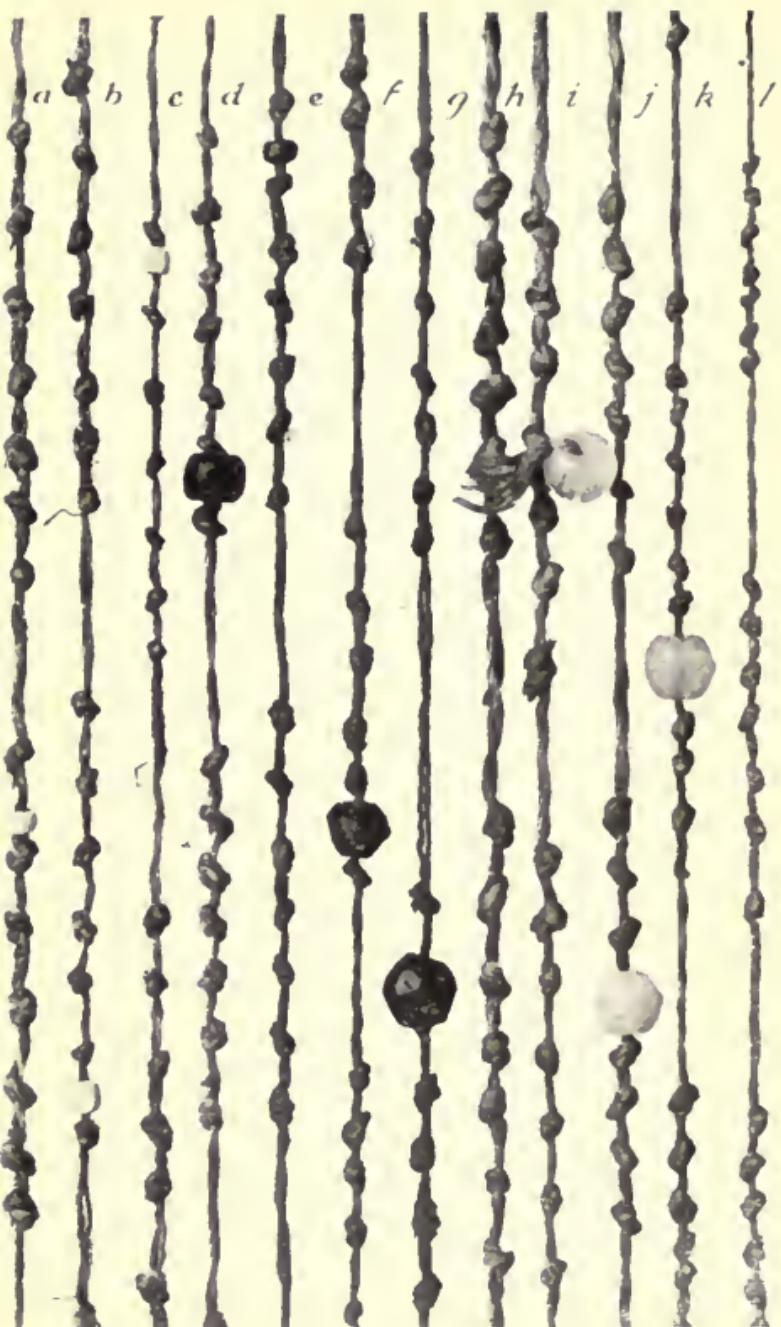
Specimen 2 is thus described by Mr McWhorter: "I am sending you . . .

one of the string records, not thinking it necessary to send both, since they are practically identical duplicates. Both pertain to the record age of a boy, first twenty years, knot for each day. In the years it is the only specimen of its kind that I have ever been able to secure." In a later letter he adds that the specimen, when he received it, was wound on a piece of card instead of being spherical. "Usually," says Mr McWhorter, "these relics are highly prized by the owners."

On examination, this record was found to be 40 ft. long and tied into 1,238 knots which are arranged with few exceptions in groups of seven, as may be seen in the typical sections shown in pl. v. There are 44 markers, all beads, and they are placed regularly after every 28 knots, with occasional exceptions. The material throughout the string is, as in the preceding specimen, dogbane (*Apocynum*), the Yakima name for which is *taxū's*, according to Dr Waterman. The record is carefully made, but here and there small shreds of the outer bark still adhere to the fiber. Its color is



TYPICAL SECTIONS OF STRING RECORD 1, NICOLA
VALLEY, B. C.
(Length of sections, 6.5 in.)



TYPICAL SECTIONS OF STRING RECORD 2, YAKIMA,
WASHINGTON. L. V. McWHORTER COLLECTION

buff, with the exception of one short length of less than an inch, where it is stained red, apparently without intention.

It is very regular in knotting and marking, as will be noticed in the tabulation, which starts from the inner end. It is worthy of note that the first two or three inches of the string are made with great care and the knots are small, perhaps symbolical of the smallness of the child and of the care it needed.

It is difficult to agree with Mr McWhorter's belief that this record covers a period of twenty years, as only forty-three lunar months are shown. It is probable that he has misunderstood his informant or that the latter was in error himself. The occasional occurrence of six knots in a group where seven would be expected may be laid to errors on the part of the maker, but the solution of the tens and the twelve offers greater difficulties. It is not probable that these Indians were sufficiently expert calendar makers to reckon intercalary days, and the use of the beads shows that the whites had already penetrated the

country so that in all probability our system of time-keeping had been adopted by them.

The specimen in the Museum at the University of Washington (Spec. 3) is similar to the others, except that it is made of buckskin instead of the native fiber-string employed in the other examples. It makes a ball about five inches in diameter, and the markers seen consist of beads. Whether other markers are used or not, and whether they are placed at regular intervals, it is impossible to determine, as permission to unwind the ball could not be obtained. The label states that it is the history of an old woman of the Yakima, and no other information concerning it is available. One of the markers visible in the illustration consists of a disc of mother-of-pearl; another is a little brass bell, and a third is a shell resembling a cowry.

It is unfortunate that it has not been possible to obtain an explanation of the markers on any of these records from its original owner. Those to whom Specimens 1 and 3 belonged are dead, and what

little information we have concerning Specimen 2 is obviously incorrect. It is possible that the owner of this is still living, but no information as to his identity is available. Mr Teit's statement that he has seen these records in use, leads to the hope that an accurate interpretation may still be obtained before their use is abandoned. It would be of great interest to know what events were considered worthy of record, and just how accurate was the remembrance of them, when, as is the case in Specimen 1, there are altogether more than a hundred markers, and no two of them are identical.

NOTE

1. Leland Locke, The Ancient Quipu, a Peruvian Knot Record, *American Anthropologist*, N. S., XIV, 325, Apr.-June 1912.

TABLE. SPECIMEN 1, a

Group number	Number of knots in group	Remarks	Number of marker
1	3		
2	6		
3-5	7		
6	6		
7-49	7		
50	7	A human hair is tied in the first knot, running through the second and third, and tied into the fourth.	1
51-90	7		
91	7	A very small marker of cedar-root fiber is tied between the second and third knots	2
92-97	7		
98	7	A marker made of a mere shred of white cotton cloth of checkerwork weave, very much worn, with a faint smear of red on it, possibly part of an original pattern.	3

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99-102	7		
103	6		
104	7		
105	7	A human hair is tied into the fourth and fifth knots.	4
106	7	A human hair is tied into the second and third knots.	5
108	7	An extremely small marker made of some woody fiber coiled three times round the main string is between the third and fourth knots.	6
109-110	7		
111	7	A human hair is tied into each of the knots except the first, sixth, and seventh.	7
112-113	7		
114	7	A human hair is tied into knots two, three, and four.	8

TABLE. SPECIMEN 1, *a*—Continued

Group number	Number of knots in group	Number of knots in group	Remarks	Number of marker
115-119	7	7	Followed by a marker on the unknotted portion between groups. It is made of old, worn cotton cloth, apparently the same piece of material, having furnished this one and the previously described marker of cloth, as both have the same weave and traces of a red pattern.	9
120-133	7	7	Has a human hair involving all knots except the first.	10
134	7	7		
135-139	7	7		11
140-145	6	6	Followed by a marker composed of a tuft of string tied on the main cord between groups.	
146-151	6	6	The last of these groups has a human hair used as a marker, which is longer, finer in texture, and a little lighter in color than any of the others yet recorded.	12

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152	6	Has a marker of dried and twisted sinew between the fifth and sixth knots.	13
153-160	6	A human hair is tied into the knot of the following marker, and the first two knots of the following group.	14
161	1	The marker is made of a short strip of deer-skin.	15
	4		16
162	6		
163-165	6	Two long human hairs are tied conspicuously into this group.	
166	6		
167-173	6		
174	6	Has a plainly visible hair in the fifth knot.	17
175-177	6		
178	6	Has a wisp of cedar-root tied between the third and fourth knots.	18
179-181	6		
182	6	A human hair is tied into the first three knots.	19
183	6	A distinctly red hair is tied into the fourth knot.	20

AND MONOGRAPHS

TABLE. SPECIMEN 1, *a*—Continued

Group number	Number of knots in group	Remarks	Number of marker
184-188	6	Carries a marker of the same white cotton cloth, but in this case without any red on it.	21
189	6	Has a marker made of a large strip of the same cotton cloth, now a dirty gray, about a foot long and half an inch wide. It is tied between the first and second knots, the two ends hanging free, one being about three inches longer than the other.	22
190	6		
191-192	6	The second of these has a hair, having every appearance of being pubic or axillary, tied into the third knot.	23
193-194	6	Followed by a marker made of a short piece of braided green and white cord tied around the space between knots and with the ends knotted together.	24
195-197	6		

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198	6	6	A human hair is involved in knots three, four, five, and six.	25
199-203	6	6	A marker of cotton cloth is between knots three and four, and a pubic hair between four and five.	26
204	6	6	Followed by a marker of red woolen thread with an inch of black horsehair tied through the marker which is between two groups.	27
205-207	6	6		28
208	6	6	A marker of white cotton cloth is between the second and third knots.	29
209	6	6		30
210	6	6	A human hair is tied through the fifth and sixth knots, which continues into the next group.	31
211	6	6	The same hair is tied into the first four knots.	
212	6	6	It is followed by a marker of woody fiber tied round the main string.	
213-214		6		

TABLE. SPECIMEN 1, *a*—Continued

Group number	Number of knots in group	Remarks	Number of marker
215	6	A marker of white cotton cloth is between the first and second knots.	32
216	6		
217	6	A marker of white cotton cloth is between the first and second knots.	33
218	6		
219	5		
220-222	6		
223	6	A short hair is tied into the first and second knots, and is then threaded through the cord in the space before the group.	34
224-229	6		
230	6		
231-234	6	A long human hair is worked into the first, third, and fourth knots.	35

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235-236	6	6	A human hair is worked into both groups, being tied into the fifth and sixth knots of the first group, and the first four of the second.	36
237-240	6	6	A marker of twisted brown fiber is between the fifth and sixth knots.	37
241	6	6	A purple woolen thread is worked into the string in these groups.	38
242-245	6	6	A marker made of a very fine strip of sinew is twisted eight or nine times round the main cord, but it can hardly be seen without a lens.	39
246-247	6	6	A human hair is tied into the third knot.	40
248	6	6	Preceded by a marker of white wool.	41
249-252	6	6	A pubic hair is worked into the last knot of the group.	42
253	6	6		
254-272	6	6		
273	6	6		
274-276	6	6		
277	6	6		

TABLE. SPECIMEN 1, *a*—Continued

Group number	Number of knots in group	Number of knots in group	Remarks	Number of marker
278	6	6	A shred of white cotton rag is tied between the fourth and fifth knots.	43
279	6	6	A human hair is tied into the fourth and fifth knots.	44
280	6	6	A white cotton rag is tied between the second and third knots. The hair marker of the previous group passes through this marker and is tied into the third knot of the group.	45
281	6	6		
282	6	6	Is preceded by a strip of deerskin about three inches long and of very soft quality.	46
283	6	6	A marker made of grocer's string is tied between the third and fourth knots of the group.	47
284	6	6		
285	6	6	Has a marker made of a shred of white cotton cloth with a pattern of intersecting red lines.	48
286-290				6

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291	6	A very small hair is tied into the fourth knot.	49
292	6	Two small markers made of hair are tied into the third and fifth knots.	51
293	6	Two small markers each made of sinew are tied between the first and second, and the fourth and fifth knots respectively.	53
294-296	6		54
297	6	Preceded by a marker of brilliant orange wool tied round the main cord.	
298-315	6		55
316	6	A cotton rag marker is between knots five and six, showing what is apparently part of the original pattern.	
317-318	6		
319	6	A marker of much newer and cleaner cotton cloth is tied between the first and second knots.	56
320-325	6		

TABLE. SPECIMEN 1, a—Continued

Group number	Number of knots in group	Number of knots in group	Remarks	Number of marker
326-327	6	6	A human hair is tied into this group, which is very complicated, as the string apparently has been broken and the two ends roughly knotted together. Another human hair is tied into the third knot of the group, while one more appears in the last knot.	57
328	6	6	Has a marker made of a short loop of human hair, one end of which is free.	58
329-335	6	6	A human hair involves every knot in this group and the first two in the following one.	59
336	6			60
337	6			61
338	6			62
339	6			63
340	6			

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341	6	A human hair is involved in this and the next group. It is first tied into the second knot of the first group, passes outside of knot three, through four and five, and outside of knot six. In the next group it passes outside of the first three knots and is then tied round the main string, passes over the fourth knot, and through the fifth and sixth, leaving about an inch and a half of its length free.	64
342	6	A short black hair is firmly tied into knots three and four in such a way as to leave an end about a third of an inch in length projecting from knot four.	65
343	6		
344-352	6		
353	6	Is preceded by a marker of black woolen cloth, containing a few threads of lighter cotton probably once a piece of clothing.	66
354	6	A shred of deerskin is tied between the fifth and sixth knots.	67
355-368	6		

TABLE. SPECIMEN 1, *a—Continued*

Group number	Number of knots in group	Number of knots in group	Remarks	Number of marker
369	7			
370-373	6			
374	7			
375-383	6			
384	6		A marker of tightly twisted deerskin is tied between the second and third knots.	68
385-405	6			
406	6		Is preceded by a marker of gray cloth made of cotton and wool mixed.	69
407-433	6			
434	6			
435-466	6			
467	6		A human hair is tied into the second knot.	70
468-469	6		Has a marker composed of a tuft of threads of cotton, not woven together in any way, and dyed a light pink.	71

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470	6	6	72
471-476	6	6	
477	7		
478-488	6		
489	6	6	73
490-493	6		
494	6		
495	6		74
496	6		
497-515	6		
516	7		
517-549	6		
550	5		
551-583	6		75

TABLE. SPECIMEN 1, *a*—Continued

Group number	Number of knots in group	Remarks	Number of marker
584	6	Is preceded by a conspicuous marker of black woolen cloth about three inches long and a quarter of an inch broad.	76
585-611	6		
612	6	Is followed by a marker made of a short piece of grocer's string.	77
613-630	6		
631	1		
632-651	6		
652	6	A marker between the second and third knots is made of cotton cloth dyed in black, red, and yellow, in an intricate pattern.	78
653-656	6		
657	7		
658-672	6		
673	6	A marker of grocer's string is tied between the first and second knots.	79

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674	6	Has a marker of coarse cotton cloth with a pattern in blue and white.	80
675	6		
676	6	Has a marker made of a strip of deerskin between the fourth and fifth knots.	81
677	6		
678-683	6	Is followed by a small marker of grocer's string between groups.	82
684	6		
685-696	6	A marker of black woolen thread is tied between knots two and three.	83
697	7		
698-740	6	A long thread of <i>kois</i> is here tied into the last knot and wrapped ten or a dozen times round the cord.	84
741	6		
742-761	6		
762	6	A marker of coarse hard deerskin is tied between the fourth and fifth knots.	85
763-769	6		

TABLE. SPECIMEN 1, *a*—Continued

Group number	Number of knots in group	Remarks	Number of marker
			is
770	6	A marker of heavy white cotton thread is doubled and tied between knots five and six.	86
771-773	6		
774	6	A tuft of light string is tied between the fifth and sixth knots.	87
775-793	6		
794	6	A shred of cotton cloth, which differs from the rest in that it has only one end hanging free, the other being concealed in the body of a knot.	88
795-800	6		
801	6	A long black human hair is tied into the sixth knot.	89
802-817	6		
818	6	A thin shred of white cotton cloth, about six inches long, is tied between the first and second knots.	90
819-846	6		

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847	6	6	A marker of white cotton cloth of checkerwork weave is tied between the second and third knots.	91
848-858	6	6	A small white cotton string is worked into the second knot.	92
859	6	6	A tightly twisted thread of <i>kois</i> , about three inches long, is wound twice round the main thread between the second and third knots.	93
860-868	6	6		94
869	6	6	A marker of deerskin is tied between the second and third knots.	
870-876	6	6		
877	6	6		
878-915	5	6		
916	7	7		
917	8	8		
918-958	6	6		
959	6	6	A short string marker is tied between the second and third knots.	95
960-974	6	6		

TABLE. SPECIMEN 1, *a*—Concluded

Group number	Number of knots in group	Remarks	Number of marker
975	6	A short white string marker is between the fifth and sixth knots.	96
976-1016	6	A short white string marker is between the fifth and sixth knots.	97
1017	6		
1018-1055	6		
1056	8		
1057-1072	6		
1073	6	Has a marker made of a very short tuft of red wool.	98
1074-1102	6		
1103	6	A vivid red marker made of woolen goods of twilled weave is tied between the second and third knots.	99
1104-1126	6		
1127	7		
1128	6		

INDIAN NOTES

1129	7	100
1130-1151	6	Is followed by a marker composed of unidentified material. It is fibrous in nature, white in color, and contains many minute foreign bodies. It is soft in texture and somewhat resembles matted cobweb.
1152	6	

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TABLE. SPECIMEN 1, b

Group number	Number of knots in group	Remarks	Number of marker
			1
1	5		
2-12	6		
13	7	Has a tuft of red woolen thread inserted in the bight of the seventh knot.	
14	6		

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Group number	Number of knots in group	Remarks	Number of marker
1-51	6	Restraining band tied here.	
52-57	6	Is followed by a short strip of deerskin tied round the main cord.	1
58	6		
59-68	6	Is separated from the next group by a blank space about three times as long as usual.	2
69	6	A wisp of <i>kois</i> is tied between the fifth and sixth knots.	
70	6		
71-87	6	A treble thread of black sewing cotton is tied round the sixth knot, so that the cotton passes round the string on each side of the knot.	3
88	6		
89-106	6		
107	6	Followed again by a long blank, only a little shorter than the one previously noted.	
108-167	6		

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TABLE. SPECIMEN 1, c—Concluded.

Group number	Number of knots in group	Number of knots in group	Remarks	Number of marker
168	6	6	A little wisp of white thread is tied into the first knot.	4
169-175	6	6	A piece of white grocer's twine is folded four times and then twisted into a single cord, tied between the second and third knots.	5
176	6	6		
177-202	6	6	A double piece of white twine passes round the main string on each side of the fifth knot.	6
203	6	6		
204-210	6	6	Is followed by a piece of white cotton twilled goods tied round the main string.	7
211	6	6		
212-233	6	6	Followed by a lumpish knot of white cotton cloth of checkerwork weave tied round the main string.	8
234	6	6		
235-248	6	6		

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Group number	Number of knots in group	Color	Remarks	Number of marker
1	1	Blue, red, and buff.		
2-4	6	Light and dark buff.		
5	6	Light and dark buff.	Wisp of black worsted between second and third knots.	1
6	6	Light and dark buff.		
7-8	6	Dark buff.		
9	6	Dark buff.	Shred of deerskin, about three inches long, between the second and third knots.	2
10-12	6	Light buff.		
13	6	Light buff.	Shred of white cotton cloth between the first and second knots, about four inches long.	3
14	6	Light buff.		

AND MONOGRAPHS

TABLE. SPECIMEN 1, d—Concluded

Group number	Number of knots in group	Color	Remarks	Number of marker
15	6	Light buff.	Double piece of white grocer's string between first and second knots.	4
16-20	6	Light buff.	Three inches of black sewing thread, now faded to dirty green, between fifth and sixth knots.	5
21	6	Light buff.		
22	6	Buff.	Material changes temporarily to fairly heavy white string.	
23-28	6	White.	Material is <i>kois</i> again.	
29-32	6	Buff.	The first knot in this group is double.	
33	7	Buff.		
34-35	6	Buff.		
36	6	Green and buff.		

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37	6	Green and buff.	Shred of white cotton cloth between second and third knots.
38-40	6	Green and buff. Purple, green, and buff.	Color changes between groups. Material here very thin.
41	6	Purple, green, and buff.	Thread of orange cotton worked into the fourth and fifth knots.
42-52	6	Purple and buff.	

TABLE. SPECIMEN 2

Group number	Number of knots in group	Remarks	Number of marker
1	7	Knots very small and close together.	
2-4	7	An opalescent bead occurs after the seventh knot.	1
5	10		
6-8	7	A similar bead occurs after the seventh knot.	2
9	10		
10-12	7	A similar bead occurs after the fourth knot.	3
13	7		
14-16	7	A similar bead occurs after the fourth knot.	4
17	7		
18-20	7	A similar bead occurs after the fourth knot.	5
21	7		
22-24	7	A similar bead occurs after the fourth knot.	6
25	7		
26-28	7	A similar bead occurs after the fourth knot.	7
29	7		
30-32	7	A similar bead occurs after the fourth knot.	

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3	8
4-36	9
5-40	10
2-44	11
5-48	12
9-52	13
4-56	14
3-60	15
2-64	16
5-68	17

AND MONOGRAPHS

TABLE. SPECIMEN 2—Continued

Group number	Number of knots in group	Remarks	Number of marker
70-72	7	A similar bead occurs after the fourth knot.	18
73	7	A similar bead occurs after the fourth knot.	19
74-76	7	A similar bead occurs after the fourth knot.	20
77	7	A similar bead occurs after the fourth knot.	21
78-80	7	A similar bead occurs after the fourth knot.	22
81	7	A similar bead occurs after the fourth knot.	23
82-84	7	A similar bead occurs after the fourth knot.	24
85	7	A similar bead occurs after the fourth knot.	25
86-88	7	A blue bead occurs after the first knot.	
89	7		
90-92	7		
93	7		
94-96	7		
97	7		
98-100	7		
101	6		
102-104	7		

INDIAN NOTES

YAKIMA

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105	6	A translucent red bead occurs after the first knot.	26
106-108	7	An opaque blue bead occurs after the seventh knot.	27
109	12		
110-111	7	A small opaque blue bead occurs after the first knot.	28
112	7		
113-115	7	An opaque red bead occurs after the first knot.	29
116	7		
117-119	7	A translucent blue bead occurs after the first knot.	30
120	7		
121-123	7	A translucent blue bead occurs after the first knot.	31
124	6		
125-127	7	A small white bead occurs after the first knot.	32
128	7		
129-130	7		
131	6		

AND MONOGRAPHS

TABLE. SPECIMEN 2—*Concluded*

Group number	Number of knots in group	Remarks	Number of marker
132	7	A small white bead occurs after the first knot.	33
133-135	7	A small white bead occurs after the first knot.	34
136	7		
137-139	7	A translucent blue bead occurs after the first knot.	35
140	7		
141-143	7	A small white bead occurs after the first knot.	36
144	7		
145-147	7	A small white bead occurs after the first knot.	37
148	7		
149-151	7	A translucent blue bead occurs after the knot.	38
152	7	A separate thin thread is threaded through it and tied on the outside. It is the only special marker in the specimen.	
153-155	7		
156	7	A small white bead occurs after the first knot.	39

INDIAN NOTES

157-159	7	7	40
160	7	7	41
161-163	7	7	
164	7	7	
165-167	7	7	
168	7	7	
169-171	7	7	
172	7	7	
173-176	7	7	
177		3	

A small white bead occurs after the first knot.
 A small white bead occurs after the first knot.
 A small white bead occurs after the first knot.
 A small white bead occurs after the first knot.
 A small white bead occurs after the first knot.
 *Then follow five feet of string without knots,
 bringing the record to an end.

SOME STRING RECORDS OF THE YAKIMA

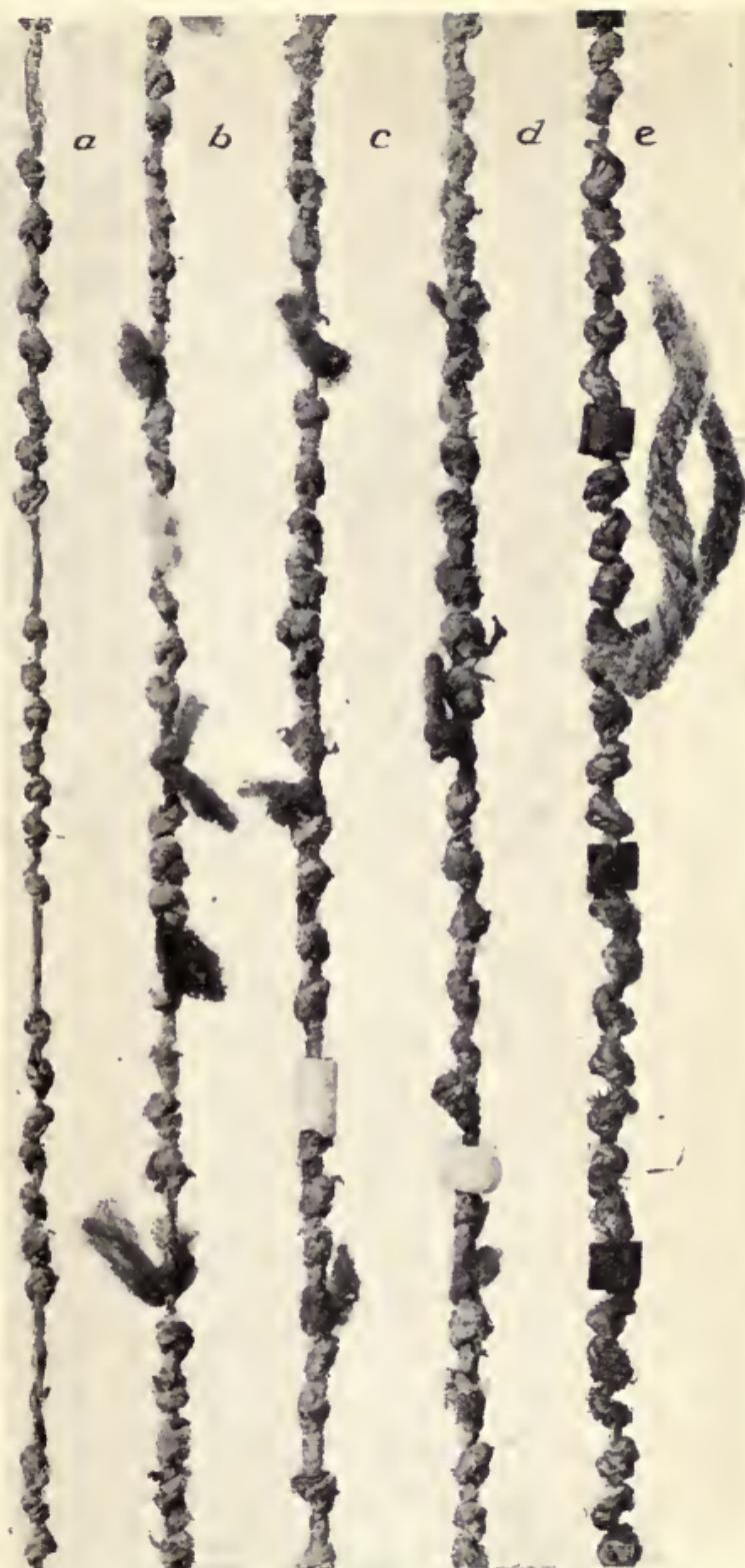
By M. R. HARRINGTON



FTER Mr Leechman's paper was in type, three more string records were received by the Museum of the American Indian, Heye Foundation, collected by Dr T. T. Waterman, who was fortunate enough to get nearly all the data concerning one of them.

The record for which we have the data (Specimen 4), which was purchased from old Sally Jackson, a Yakima, measures about 35 ft. long, the first 26 ft. of which are made of deerskin, the remainder of twisted fiber cord. It contains some 1,577 simple knots, 226 markers of red yarn, three markers of blue yarn, one of green yarn, one of pink yarn, two of dentalium shell, and three consisting of glass beads, one yellow, one blue, and one red. In several

INDIAN NOTES



TYPICAL SECTIONS OF STRING RECORDS 4 AND 6.
YAKIMA, WASHINGTON
(Length of sections, 5.5 in.)

places a single black human hair is caught in a knot, but this is perhaps accidental, as no explanation of them was given.

Mrs Jackson commenced the record on the death of her husband, apparently for the sole purpose of keeping tally of the dates of deaths among her family, for no other events are recorded. Nights are represented by plain knots arranged in groups of seven, with considerable precision except at the very first, and after every seventh knot is a piece of red yarn tied on to represent Sunday, while the other markers represent the deaths as they occurred (pl. VI, *b, c, d.*).

The first red marker, however, records the death of her husband, "Old Jackson;" then come five knots, and then another red marker, this one representing Sunday, as do all of this color thereafter.

One week after the loss of her husband, one of her sons also passed away, which sad event is recorded by a piece of blue yarn tied between the second and third knots, by which we may infer that he died on a Tuesday. His loss seems to have con-

fused her to such an extent that she gives nine instead of seven nights to the week of his death, but thereafter the knots appear in groups of seven with strict regularity.

After the twenty-third red marker following Jackson's death in the record, or twenty-three weeks later, occurred the death of one of Sally's grandchildren, represented by a bead of dentalium shell about 0.2 in. long, which seems to have taken place on Monday, because the bead is strung on the thong between the first and second knots. A little more than a year after the old man died,—the day after the 56th Sunday, to be exact,—a large yellow glass bead (pl. vi, *a*) represents the death of Sally's mother; while on the Wednesday after the eighty-second Sunday a second short piece of dentalium shell records the loss of another grandchild (pl. vi, *c*).

Sally's sister died on the 99th Monday, according to the record, as shown by a piece of blue yarn tied between the first and second knots following the ninety-ninth red marker; and a few weeks later, the Friday following the 104th Sunday,—as shown by

a blue bead,—she lost another grandchild, the last relative she had left in the vicinity of her home.

More than a year then passed without further bereavement, but then a piece of green yarn, tied between the fifth and sixth knots following the 164th red marker, tells of the death of another son, at Pendleton, Oregon.

For ten weeks Sally had a respite from bad news; but on the Friday after the 174th Sunday following her husband's decease, news reached her of the death of her sister's daughter on Yakima river, and this was recorded by a red bead with a white center.

The list of deaths as furnished by Dr Waterman's data ends with a bit of blue yarn tied on the thong between the fourth and fifth knots following the 192d red Sunday marker, representing the death of certain of Sally's "relatives on Dry creek;" but a pink marker set in the space designating the following Thursday remains without explanation (pl. vi, *b*).

The red Sunday markers end with the 225th; from this point onward the Sunday

space between the groups of knots, representing the seven nights of the week, remains bare (pl. VI, *a*). These groups continue for sixty weeks more, after which but one day is recorded, which was the last of June, 1919, according to Dr Waterman's data. Sally forgot to make a knot for July 1st, and never resumed the record.

Counting back the weeks from this date, we find that the death of "Old Jackson" must have taken place about the beginning of 1914.

The second and third records, which we will call Specimens 5 and 6, respectively, were made by an old Yakima woman named Mrs Luskin, living at Parker on Yakima river, but were procured by Dr Waterman from Emily Paul, also a Yakima, who could not explain them in detail, but said that each knot represented a day and each group of seven knots a week; while the cloth markers she thought represented "deaths."

An examination of the second example (Specimen 5), which seems, like the first, to have been a combined record, not only of the passing days and weeks, but of certain

important events, shows it to be 32 ft. 7 in. long, the first 19 ft. 2 in. being deerskin, the remainder dogbane fiber. After the first knot, which stands alone, there are 156 groups of 7 knots each, then a single terminal knot, making 1,093 knots in all. There are also 38 markers made of rags, beads of glass and dentalium, deerskin, yarn, fiber, and red thread, and one human hair caught in a knot. An examination of these shows that in the first part of the record the markers occur on an average of every twenty-nine days, and possibly therefore signify moons, as in the case mentioned by Mr Leechman, but this system seems to have been purposely suspended after about the 15th moon, or some markers may have been lost from the record. Other markers scattered among the "lunar" ones, to the number of 20, may represent deaths, or perhaps other important events. Since the record is not a simple one, like No. 6, and since we have no explanation for it, as we have for No. 4, the following table is presented to show the exact arrangement of the markers as they appear:

TABLE. SPECIMEN 5

Group number	Number of knots in group	Number of markers	Remarks	Number of markers	
				1	2
1 2-3	7	1	A marker of greenish cotton cloth tied between second and third knots.	1	2
4	7	7		3	
5-6	7		A human hair tied into the third and another into the fourth and fifth knots.		
7	7				
8	7	7	A marker of red cotton fabric, with black polka-dots, tied between the third and fourth knots.	4	
9-11	7				
12	7	7	A marker of narrow yellow ribbon tied between second and third knots.	5	

INDIAN NOTES

13	7	7	A marker, of yellowish thread tied between third and fourth knots.	6
14	7	7	A marker of cotton twine tied between fifth and sixth knots.	7
15-16	7	7	A marker of white cotton rag tied between first and second knots.	8
17	7	7	A marker of common cotton twine tied between first and second knots.	9
18-20	7	7	A marker of common cotton twine tied between first and second knots.	10
21	7	7	A marker of common cotton twine tied between first and second knots.	11
22	7	6		
23	7	7		
24	7	7		
25	7	7		
26-28	7	7	A marker of green yarn tied between first and second knots.	11
29	7	7		
30-32	7	7		

TABLE. SPECIMEN 5—Continued

Group number	Number of knots in group	Remarks	Number of marker
33	7	A marker of pink yarn tied between fourth and fifth knots.	12
34	7	A marker of white cotton rag tied between fourth and fifth knots.	13
35	7		
36	7	A marker of pink yarn tied between fifth and sixth knots.	14
37	7		
38-40	7		
41	7	A marker, a yellow glass bead, strung between fifth and sixth knots.	15
42-44	7		
45	7	A marker of short deerskin thong tied between first and second knots.	16
		A marker of cotton rag tied over third knot.	17

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46-48	7	7	A marker of short deerskin thong tied between seventh and eighth knots.	18
49	7	7	A marker of deerskin thong about 3 in. long, tied between first and second knots.	19
50-53	7	7	A marker of fiber (dogbane?) tied between second and third knots.	20
54	7	7	A marker of deerskin thong tied between first and second knots.	21
55	7	7	A marker, a blue bead, strung between fifth and sixth knots.	22
56	7	7	A marker of yellow felt tied between the first knot of this group and the last of the preceding.	23
57	7	7	A marker, a blue bead, tied on with white thread, between fifth and sixth knots.	24
58	7	7		
59-61	7	7		
62	7	7		
63-65	7	7		
66	7	7		

TABLE. SPECIMEN 5—*Continued*

Group number	Number of knots in group	Remarks	Number of marker
			25
67	7	A marker of maroon yarn tied between fifth and sixth knots.	
68	7		
69-74	7		
75	7	A marker of old-rose figured cotton material tied between fifth and sixth knots.	26
76-84	7		
85	7	A marker of white cotton goods with small black figures tied on just before first knot.	27
86	7	A marker, a light green bead, tied on with white thread, as it was too small to string, between the fifth and sixth knots.	28
87-88	7		
89	7	A marker, a dark blue bead, tied on with white thread, between the fifth and sixth knots.	29

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90	7	7	The deerskin thong part of the record ends here and the dogbane fiber cord begins.	30
91-93	7	7	A marker of white cotton fabric with small black figures tied between the fifth and sixth knots.	31
94	7	7	A marker of the same fabric tied between sixth and seventh knots.	32
95-103	7	7	A marker of red thread, about 8 in. long, tied between third and fourth knots.	33
104	7	7	A marker, a blue bead, strung on between fifth and sixth knots.	34
105	7	7		
106	7	7		
107-110	7	7		
111	7	7		
112-113	7	7		
114	7	7	A marker, a light green "Russian" bead, through which has been tied a piece of white cotton twine, strung between fifth and sixth knots.	34

AND MONOGRAPHS

TABLE. SPECIMEN 5—*Concluded*

Group number	Number of knots in group	Remarks	Number of marker
115	7	A marker, a yellow glass bead, tied with white woolen yarn, between the fifth and sixth knots.	35
116-134	7	A marker of green thread tied between the first and second knots.	36
135	7	A marker, an amber-colored bead, tied with white yarn between the fifth and sixth knots.	37
136	7	A marker of short deerskin thong, tied between the fifth and sixth knots.	38
137	7		
138	7		
139-154	7		
155	7	A marker, a piece of dentalium shell (0.4 in. long), strung and tied between fifth and sixth knots.	39
156	1		

INDIAN NOTES

The third record (Specimen 6) is the shortest of all, measuring only 13 ft. 4 in. in length, and is made entirely of fiber. It begins in an unusual manner with four small knots, followed by a black bead, then another knot, then a bead, then a knot, then a space 1.8 in. long, in which are strung 7 black beads followed by a knot; then comes 8 in. of bare fiber cord, then a group of 2 knots, after which the groups of 7 knots each run to the number of 73, with one group of ten knots. After the 60th group the Sundays are marked by blue "Russian" beads, instead of by the simple gaps between the groups, and the moons are indicated throughout by tufts of yarn (pl. VI, *e*) or rag placed at intervals of from twenty-four to thirty-two knots. Only six days of the last week are recorded, after which the string is occupied by 24 green and blue glass beads of the "Russian" variety, evidently intended for marking succeeding Sundays. Nothing but the succession of days, weeks, and moons, seems to have been preserved in this record. It seems purely chronological, a "calendar string," unless the "moon"

markers, as suggested below, may have another meaning.

The possibility that the use of these records, called *iti ta'mat* by the Yakima, may not be very old among these Indians is suggested by the fact that all or most of them are based on our modern week of seven days, which is certainly not a native concept—yet the “moons” recorded by the markers in some of the strings are not calendar months by any means, but perhaps an attempt to indicate lunar months, a native concept. Possibly the original string records of these tribes were concerned only with days and moons. It is interesting to note that such records seem to have been kept only by the women, which fact leads to a speculation as to whether the so-called “lunar month” markers may not in reality represent menstrual periods, which would account for their irregularity of placement (ranging in one record from 24 to 32 days apart) and their entire absence from some parts of the records.

Chronological if not biographical string records are not unknown in other parts of

North America; Lumholtz,¹ for example, reporting them from the Huichol Indians of northern Mexico; while Mr F. W. Hodge informs the writer that he has seen Zuñi laborers keep account of each day's work by tying a knot in a string carefully kept for that purpose.

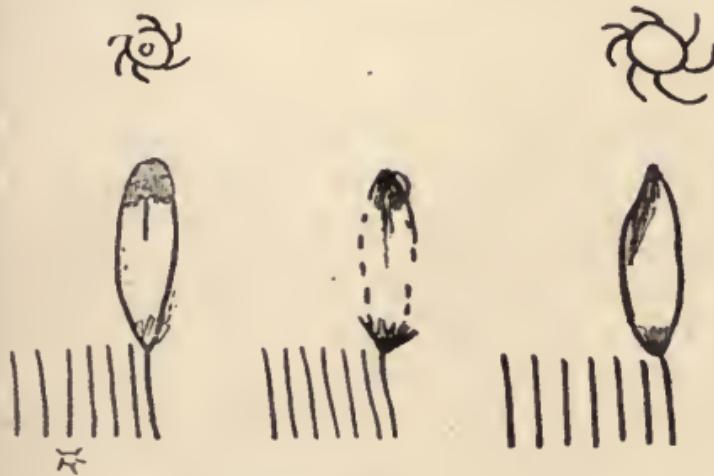


FIG. 1.—Weekly Calendar of the Kiowa.

The writer has noticed the existence among Indians in other parts of the United States of other native inventions intended particularly to help the uneducated members of the tribes to "keep track of Sunday."

One of them is shown in fig. 1, illustrating a method employed by the Kiowa, which is merely to mark on a convenient surface a row of six straight parallel lines, one for each week-day, and then to draw an eagle-feather to represent Sunday. On the Sundays when the Peyote ceremony is enacted, a small "peyote button" is drawn above the eagle-feather.

NOTE

1. LUMHOLTZ, CARL, Unknown Mexico, Vol. II, p. 128. New York, 1902.

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